

4. (Once Amended) The device of claim 1, further comprising a button, the haptic-feedback force being output through the button.

5. (Once Amended) The device of claim 4, wherein the button is configured to respond to the haptic-feedback force in a degree of freedom of motion of the button.

6. (Once Amended) The device of claim 4, wherein the button is configured to respond to the haptic-feedback force with a lateral movement, approximately perpendicular to a degree of freedom of motion of the button.

7. (Once Amended) The device of claim 1, wherein the haptic-feedback force output by the electroactive polymer actuator is a rotary force.

8. (Once Amended) The device of claim 1, wherein the haptic-feedback force output by the electroactive polymer actuator is a linear force.

9. (Once Amended) The device of claim 1, wherein the electroactive polymer actuator is configured to move portions of the housing.

10. (Once Amended) The device of claim 1, wherein the electroactive polymer actuator is configured to modify the frictional resistance of a moving part.

11. (Once Amended) The device of claim 1, wherein the electroactive polymer actuator is configured to output the haptic-feedback force to a rotating wheel coupled to the housing.

12. (Once Amended) The device of claim 8, wherein the electroactive polymer actuator is configured to move a portion of a member from inside of the housing to outside of the housing.

13. (Once Amended) The device of claim 12, wherein the electroactive polymer actuator is one of a plurality of electroactive polymer actuators, the plurality of electroactive polymer actuators being arranged in a tactile array.

14. (Once Amended) The device of claim 1, wherein the housing is configured as a stylus.

15. (Once Amended) The device of claim 1, wherein the housing is configured as a trackpoint joystick controller.

16. (Once Amended) An apparatus, comprising:  
a sensor configured to detect a movement of at least a portion of the apparatus, the sensor configured to output sensor signals associated with the movement; and  
an electroactive polymer actuator coupled to the apparatus and configured to output a haptic-feedback force associated with the output sensor signals, the electroactive polymer actuator being controlled by associated input signals.

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17. (Once Amended) The device of claim 16, wherein the haptic-feedback force output by the electroactive polymer actuator is an inertial force caused by moving a mass.

18. (Once Amended) The device of claim 16, further comprising a button, the haptic-feedback force being output through the button.

19. (Once Amended) The device of claim 16, wherein the haptic-feedback force output by the electroactive polymer actuator is a rotary force.

20. (Once Amended) The device of claim 16, wherein the haptic-feedback force output by the electroactive polymer actuator is a linear force.

21. (Once Amended) The device of claim 16, wherein the electroactive polymer actuator includes at least two layers of electroactive polymer material, the electroactive polymer actuator being configured to bend based on a characteristic of each layer of electroactive polymer material.

22. (Once Amended) The device of claim 16, wherein the electroactive polymer actuator includes a dielectric surrounded by two electrodes, the dielectric being configured to expand in area when activated by the input signals.

23. (Once Amended) The device of claim 16, wherein the electroactive polymer actuator is configured to move portions of the apparatus.

24. (Once Amended) The device of claim 16, wherein the electroactive polymer actuator is configured to modify the frictional resistance of a moving part.

25. (Once Amended) The device of claim 16, wherein the electroactive polymer actuator is configured to move a portion of a member from inside of the apparatus to outside of the apparatus.

26. (Once Amended) An apparatus, comprising:

a housing; and

an electroactive polymer (EAP) element coupled to the housing and configured to output a haptic-feedback force associated with output sensor signals, the EAP element being controlled by associated input signals, the haptic-feedback force being generated by deformation of the EAP element.

27. (Once Amended) The device of claim 26, wherein the EAP element is configured to detect a contact of the housing.

28. (Once Amended) The device of claim 26, wherein the EAP element is configured to detect the magnitude of an applied pressure on the EAP element.

29. (Once Amended) The device of claim 26, wherein the haptic-feedback force output by the EAP element is a linear force.

30. (Once Amended) The device of claim 26, wherein the housing is configured as a joystick or a trackpoint controller.

31. (Once Amended) A method, comprising:

detecting movement of a housing and outputting sensor signals associated with the detected movement; and

outputting a haptic-feedback force, the haptic-feedback force being generated by a deformation of an electroactive polymer actuator, the haptic-feedback force being based on input signals to the electroactive polymer actuator.

32. (Once Amended) The method of claim 31, wherein the electroactive polymer actuator is configured to output a rotary force.

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33. (Once Amended) The method of claim 31, wherein the electroactive polymer actuator is configured to output a linear force.

34. (Once Amended) The method of claim 31, wherein the electroactive polymer actuator is configured to modify the frictional resistance of a moving part.

35. (Once Amended) The method of claim 31, wherein the electroactive polymer actuator is configured to move portions of the housing.

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36. (New) An apparatus, comprising:  
a substantially planar member having an electroactive polymer and a compliant member, the substantially planar member defining a plane, the electroactive polymer being configured to receive a signal and to deform in at least one of a direction substantially corresponding to the plane and a direction substantially normal to the plane, in response to the signal to output a haptic feedback.

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37. (New) The apparatus of claim 36, wherein:  
the compliant member is a first compliant member, the substantially planar member further including a second compliant member, the electroactive polymer being disposed between the first compliant member and the second compliant member.

38. (New) The apparatus of 36, wherein:  
the compliant member is a first electrode, the substantially planar member further including a second electrode, the electroactive polymer being disposed between the first electrode and the second electrode,

the electroactive polymer having a width between the first electrode and the second electrode, the electroactive polymer being configured to deform in response to the signal so that the width of the electroactive polymer is modified.

39. (New) An apparatus, comprising:

an electroactive polymer; and

an electrode coupled to the electroactive polymer, the electrode configured to receive a signal associated with a haptic feedback force,

the electroactive polymer configured to deform in response to the signal to output the haptic feedback force.

40. (New) The apparatus of claim 39, wherein:

the electroactive polymer and the electrode are collectively cantilevered to a base and defining a direction substantially perpendicular to the base, the electroactive polymer configured to deform with respect to the direction.

41. (New) The apparatus of claim 39, the electrode being a first electrode, further comprising:

a second electrode, the electroactive polymer being disposed between the first electrode and the second electrode,

the first electrode, the second electrode and the electroactive polymer being collectively cantilevered to a base and collectively defining a plane, the electroactive polymer configured to deform with respect to at least one of along the plane and substantially perpendicular to the plane.

42. (New) The apparatus of claim 39, the electrode being a first electrode, further comprising:

a second electrode and a third electrode,

the electroactive polymer forms a cylindrical structure, the first electrode, the second electrode and the third electrode being disposed in contact with the electroactive polymer, the electroactive polymer being configured to deform in two degrees of freedom.